

# Northumbria Research Link

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### **Abstract**

The focus for this article is on the use of information and communications technology to facilitate the teaching of business and management through an e-portfolio diary/journal system. PebblePad+ is a transferable e-portfolio system that enables students to track their own professional competences and development over the length of their academic and professional career, as well as supporting their wider learning. This article will be of particular interest to those educationalists that recognize the importance of reflection in building powerful cognitive structures, as well as the potential benefits of using information and communication technology to create an e-portfolio of a student's academic and professional achievements.

### **Keywords**

management of knowledge and learning, portfolios, e-learning/technology-mediated learning

## **Resource Description**

PebblePad+ (PP+) is a third-generation e-portfolio, originally developed in England by the University of Wolverhampton, which offers universities a range of functions in delivering their curriculum. PP+ can be linked to a variety of software packages, such as Blackboard and Moodle, and to a variety of students' Web 2.0 tools to provide a curriculum delivery system. PP+ provides a variety of tools that can be categorized in terms of teaching and learning, assessment and quality assurance, and for tutoring and support. Such is the potential of PP+ that the Business School at Northumbria University in England are implementing the systematic introduction of this e-portfolio across its curriculum—but why? This resource review offers some insights into the reasons to view PP+ as an innovative and versatile curriculum delivery system.

## *Tools for Teaching and Learning*

PP+ offers students the facility to use interactive workbooks that can be accessed by other students in collaborative activities, as well as their lecturers. The software promotes students' creativity through the customizable templates where students may make notes as they wish and then share these with fellow students. PP+ is also a useful tool in developing wikis and group projects through "webfolios." Lecturers can also create opportunities for collaborative work, and in setting a "gateway" manage the composition of the task group. Students may also choose to navigate through a set of lecture notes or problems at their own pace skipping those areas that they already have mastery over using a "wizard" facility. The inclusion of "prompting questions" also requires students to engage in a review of their learning and consider their wider progress.

The principle of reflection on personal development is not simply restricted to the classroom but is carried further through the tracking of their wider professional development. PP+ enables "assets" to be created that then form part of a Personal Development Plan, and continue thereafter as a lifelong record of achievement and professional growth. The software can link to Mozilla's Backpack "badges," which are widely recognized by employers as evidence of attainment. As such, PP+ offers the potential of a documentation tool for lifelong learning.

## *Assessment and Quality Assurance*

PP+ enables students to submit their assignments in the knowledge that their work is secure and its life history is traceable. The software is capable of identifying particular areas for support such as dyslexia and, in identifying recurring errors, highlight those areas to address. PP+ enables lecturers to respond through a variety of media including video, email, or Skype to students' formative and summative work. Assessment of students' work can be aligned for blind, double-blind marking, as well as for the internal and external moderation of assessment. PP+ also provides a range of analytical reporting that can feed into a course review or the institution's wider quality assurance system.

## *Tutoring and Support*

PP+ provides lecturers with a systematic overview of their students' progress through a variety of functions, such as milestones, alerts, and notices, which facilitate a means of communicating support. For example, tools may be chosen when setting up an assignment to remind students of an impending submission date or to set specific targets for individual students. Such tools enable a lecturer to maintain an overview of the cohort while addressing the specific needs of particular students and supporting personalized learning.

## *Use in the Classroom*

PP+ is a third-generation e-portfolio developed in England by the University of Wolverhampton that provides a range of functionality that promotes independent learning, teaching and assessment, and the effective tracking of students' performance.

## *For Students*

One application of PP+ is to process ethical submissions for students' dissertations in an efficient and effective manner, as in the example of Northumbria University's Business School where 850 undergraduates are being supervised using this system, and at Sheffield University where it is used in its Doctoral School. The embedded screens and interactive nature of PP+ enables a conversation to take place between student(s) and their research supervisor. The conversation can take place asynchronously or at the same time. PP+ enables this conversation to take place using a variety of media including Skype, emails, or just jot down minutes of face-to-face meetings.

A second application of PP+ is to act as a log-book of the research process with accurate tracking of contact and support that has proved invaluable in generating an evidence base of a student's level of commitment, or that of their supervisor. It can also be used to generate a "team learning contract" where one is deemed useful.

A third application of PP+ is in the creation of personal and collaborative blogs that enables the dissemination of information and views to a variety of audiences. This can serve to create wikis and other forms of collaborative learning. For example, groups could be tasked with a research exercise and generate a collective report based on their individual researches.

A fourth application of PP+ is to record research in the form of personal and customized templates in which students are able to create their own resource from their reading, and that they are able to share with others. This resource can be stored as a permanent set of notes for future reference.

A fifth application of PP+ is as a vehicle for personal reflection. Harvey and Jenkins (2014) refer to knowledge development, praxis, and reflection as the building blocks of learning. In promoting self-reflection through a series of prompting questions on their work, PP+ enables students to reflect on the core issues of what they learn, why they learn, and its possible application to their professional context. Moreover, for Densten and Gray (2001) this process of reflection on knowledge development and experiential learning is central to the development of leadership competences. One possible application is, for example, within Northumbria University's MBA where students are required to reflect on their leadership behaviors in relation to the theory of authentic leadership.

A sixth application of PP+ is as a mechanism for students to submit assignments in a secure and auditable manner. One possible use of PP+ is as a log-book during work placement where students have to record the development of their professional competencies and feedback from host employers, as in the case of Northumbria University's work-based Business Leadership and Corporate Management degree where students spend almost 2 years in employment.

### *For Lecturers*

PP+ enables lecturers to reevaluate how they teach complex topics. For example, Sangster, Franklin, Alwis, Abdul-Rahmi, and Stoner (2014) report on how lecturers in a Scottish university redesigned their teaching of double-entry bookkeeping in an undergraduate accounting degree using Pacioli's centuries' old pedagogy with improved students' outcomes.

PP+ enables lecturers to mark assignments, record marks and then build a record of a students' progress both within a module and across their degree program through an ancillary platform called "Active Teaching and Assessment Space" (ATLAS). ATLAS enables lecturers to create a virtual classroom environment, creating workbooks for students' research and reporting, as well as specifying the nature of assessment for-mats, and can be used to set up a moderation system that can be accessed by external examiners. Instead of using a range of paperwork, such as internal and external mod-eration forms, PP+ provides an auditable system that tracks students' submissions, records marks, and provides a range of analytical reports for course performance reviews. As such, PP+ facilitates a more reliable assessment system that can feed into an institution's quality system.

PP+ also enables lecturers to review how they wish students' performance to be presented and assessed. One approach that has been adopted by Victoria University in Melbourne is to embed PP+ throughout the Business Curriculum and require students to use PP+ in their presentations to potential employers.

### **Analysis and Comparison**

There are two learner-centered principles that underpin PP+ and distinguish it from many other versions of e-portfolio. First, it empowers the student with control over the learning process. Whereas other virtual learning environments, such as Moodle or Blackboard, are driven by the lecturer, PP+ is controlled by the student. The creation of resources or templates as assets enables students to be creative and redefine the methods and boundaries of their learning instead of relying on lecturer-driven materials. Secondly, PP+ provides a personal learning space in which the student owns the learning material. In this respect, even after a module is completed, the learning material is still accessible by the student. In short, PP+ offers a new vehicle to promote personalized learning over a lifetime.

Compared to earlier e-portfolios, PP+ is not another form of file dump that enables assignments to be deposited to a central repository. The potential of linking students together in collaborative tasks such as wikis and the sharing of information from their research is an important feature of PP+ and opens up the possibility of creating communities of practice (Lave & Wenger, 1991) rather than simply classes of individuals. PP+ is used widely in Australian and British universities and is available globally. It seems as if PP+ will become, along with other forms of information technology such as Blackboard or Moodle, a common feature of university education.

There are, however, hurdles to overcome if PP+ is to be utilized to its full potential. First, as Peacock, Gordon, Murray, Morss, and Dunlop (2010) have reported, lecturers need to be fully aware of the capabilities of PP+ and its wider pedagogical benefits, particularly in terms of reflective learning and the creation of personal development plans. Second, lecturers need ready access to information technology so that they can develop their own competence and confidence and combat "initiative fatigue." In order to maximize impact, universities should provide a systematic program of training and develop communities of practice wherein lecturers may develop their expertise in a supportive manner.

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